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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,846	08/25/2006	Masaharu Ueda	4276-0115PUS1	4142

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EXAMINER	
FOGARTY, CAITLIN ANNE	

ART UNIT	PAPER NUMBER
1793	

NOTIFICATION DATE	DELIVERY MODE
07/09/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/590,846	UEDA ET AL.	
	Examiner	Art Unit	
	CAITLIN FOGARTY	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 13-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 13-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/25/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1, 2, and 13 – 20 are pending and presented for this examination.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) was submitted on August 25, 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 2, and 13 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the English machine translation of JP 2002-226914 (hereafter JP '914).

With respect to instant claim 1, the abstract and [0009] of JP '914 teach a method for producing a steel rail having a high content of carbon with an overlapping composition as seen in the table below.

Element	Instant Claims 1&2 (mass%)	JP '914 (mass%)	Overlapping Range (mass%)
C	0.85 – 1.40	0.6 – 1.20	0.85 – 1.20
Si	0.05 – 2.00	0.10 – 1.0	0.10 – 1.0
Mn	0.05 – 2.00	0.40 – 1.50	0.40 – 1.50
B	0.0001 – 0.0050	---	---
Cr	0.05 – 2.00	0.05 – 2.00	0.05 – 2.00
Mo	0.01 – 0.50	0.01 – 0.30	0.01 – 0.30
Co	0.003 – 2.00	0.10 – 2.00	0.10 – 2.00
Cu	0.01 – 1.00	0.05 – 2.00	0.05 – 1.00
Ni	0.01 – 1.00	0.05 – 2.00	0.05 – 1.00
Ti	0.0050 – 0.0500	0.005 – 0.100	0.005 – 0.0500
Mg	0.0005 – 0.0200	0.0005 – 0.0100	0.0005 – 0.0100
Ca	0.0005 – 0.0150	0.0005 – 0.0100	0.0005 – 0.0100
Al	0.0100 – 1.00	---	---
Zr	0.0001 – 0.2000	---	---
N	0.0060 – 0.0200	---	---
V	0.005 – 0.500	0.01 – 0.30	0.01 – 0.30
Nb	0.002 – 0.050	0.002 – 0.050	0.002 – 0.050
Fe + impurities	Balance	Balance	Balance

JP '914 teaches that the method comprises finish rolling the rail in two or more consecutive passes with a reduction rate per pass of a cross-section of the rail of 5-30% which is within the range recited in instant claim 1. JP '914 does not specifically teach expression 1, however paragraph [0009] of JP '914 teaches that the time between rolling passes (S) is 10 seconds or less and that the surface temperature of the rail (T)

is 900-1050°C. Therefore, JP '914 satisfies expression 1 if, for example, C is 0.85 and T is 900°C (therefore CPT1=1.05) because S may be less than 1.05.

In regards to instant claim 2, the abstract and [0009] of JP '914 teach a method for producing a steel rail having a high content of carbon with an overlapping composition as seen in the table above. JP '914 discloses that the method comprises finish rolling the rail in two or more consecutive passes with a reduction rate per pass of a cross-section of the rail of 5-30% which overlaps with the ranges recited in instant claim 2. JP '914 does not specifically teach expression 2, however paragraph [0009] of JP '914 teaches that the time between rolling passes (S) is 10 seconds or less, the surface temperature of the rail (T) is 900-1050°C, and that the number of passes (P) is 2 or more. Therefore, JP '914 satisfies expression 2 if, for example, C is 0.85, T is 900°C, and P is 3 (therefore CPT2=1.05) because S may be less than 1.05.

Since the claimed compositional ranges of claims 1 and 2 either overlap or are within the ranges disclosed by JP '914, a prima facie case of obviousness exists. See MPEP 2144.05. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed steel rail composition and method from the steel rail composition and method disclosed by JP '914 because JP '914 teaches the same utility (i.e. a railroad rail) in the whole disclosed range.

Regarding instant claims 13 and 17, JP '914 does not specifically teach the recited chemical composition relationship. However, the steel rail of JP '914 would satisfy the relationship if, for example, V is 0.05, Nb is 0.005, and N is 0. In addition, it is well settled that there is no invention in the discovery of a general formula if it covers

a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those ordinary skilled in the art. *In re Austin, et al.*, 149 USPQ 685, 688.

With respect to instant claims 14 and 18, the abstract and paragraph [0009] of JP '914 disclose that immediately after the finish rolling step, the surface of the rail head is cooled at a cooling rate of 0.5-50°C./s until the surface temperature reaches 800-950°C. These ranges overlap with the ranges recited in instant claims 14 and 18.

In regards to instant claims 15, 16, 19, and 20, the abstract of JP '914 teaches that the steel rail is cooled to 800-950°C at a cooling rate of 0.5-50°C./s on the rail surface and then subjected to natural cooling. These ranges overlap with the ranges recited in instant claims 15, 16, 19, and 20. Therefore, it would have been obvious to one of ordinary skill in the art to cool the surface of the rail head at a cooling rate of 2-30°C./s until the surface temperature reaches a desired temperature and then allow the rail to further cool at room temperature (natural cooling) because it is well known in the art to cool at a desired cooling rate first to a desired temperature and then allow the cooling to finish naturally at room temperature as evidenced by JP '914.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAITLIN FOGARTY whose telephone number is

(571)270-3589. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

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